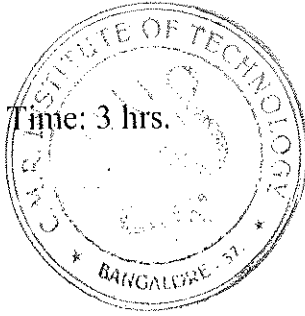


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Seventh Semester B.E. Degree Examination, June/July 2016
Engineering Economy



Time: 3 hrs.

Max. Marks: 100

- Note: 1. Answer FIVE full questions, selecting at least TWO questions from each part.**
2. Use of discrete interest factor table is permitted.

PART – A

- 1 a. Differentiate between: i) Intuition and analysis, ii) Tactics and strategy. (08 Marks)
 b. Briefly explain the law of demand and supply. (06 Marks)
 c. A loan of ₹10000 borrowed today under an agreement that ₹14000 is to be paid sometime in future. When should the payment be made, if the loan earns interest at a rate of 8% compounded quarterly (interpolate if necessary). (06 Marks)
- 2 a. Explain the future worth method of comparison. (05 Marks)
 b. Two types of trucks are available for transportation use. The details are as follows:

| Particulars | Truck A | Truck B |
|-------------------------------|-----------|-----------|
| First cost (₹) | 10,00,000 | 15,00,000 |
| Maintenance cost (₹) (Annual) | 20,000 | 15,000 |
| Estimated Salvage value (₹) | 2,00,000 | 5,00,000 |
| Estimated life | 5 years | 10 years |

- Both the truck deliver same amount of work. Assume interest rate of 7%. Which truck is to be preferred on PW case. (10 Marks)
- c. A NGO received funds of ₹10,00,000 from the government for the construction and up keep of the administration building for 10 years. Annual maintenance and salary of the staff estimated to be ₹20000 for the first year and likely to increase 10% every year upto 10 years. In addition ₹25000 needed for painting every 5 years. The NGO has to make own arrangement to earn revenue for perpetual maintenance after 10 years. What amount remains with NGO for the construction of building if 10% interest considered? (05 Marks)
- 3 a. Write notes on: i) Ownership life, ii) Accounting life, iii) Economic life. (06 Marks)
 b. The first cost of an asset is ₹5,00,000. The annual maintenance in the first year is ₹2000 and increases by ₹1000 every year upto 10th year. The annual income is expected to be ₹50000 in the first year with increase of ₹25000 every year upto 10th year. The operating cost is ₹6000 per year. The salvage value is ₹30000 at the end of 10th year. Find the equivalent annual cost of the machine at 12% interest rate. (08 Marks)
 c. An asset was purchased five years ago for ₹52000. It was expected to have an economic life of 8 years at which salvage value would be ₹4000. If the function of the asset would no longer needed for what price must it be sold now to recover the invested capital when $i = 12\%$. (06 Marks)
- 4 a. Explain: (i) MARR, (ii) IRR, (iii) Depreciation. (06 Marks)
 b. Explain briefly the causes of depreciation. (06 Marks)
 c. A CNC machine costs ₹30,00,000 is estimated to serve for 8 years after which its salvage value is estimated to be 2,50,000. Find:
 i) Book value of machine after 4th and 6th year by declining balance method.
 ii) Depreciation fund during 6th and 7th year by SOYD method.
 iii) Depreciation charge by straight line method of depreciation. (08 Marks)

PART – B

- 5 a. Differentiate between estimating and costing. (06 Marks)
- b. Two operators involved in forging machine for 96 jobs. Each weighing 5 kg in a shift of 8 hours. They are paid at the rate of ₹500 and ₹400 per day. The forged material costs ₹40 per kg. If the factory and administrative costs put together twice of the labour cost. Find the cost of production per unit. (07 Marks)
- c. A company produces components for tractors. The selling expenses are $\frac{1}{4}$ th of the factory cost. If the material cost, labour cost and factory overhead charges in the ratio 1:4:2, if the material cost is ₹3000, what profit is made, if the management wants to make a profit of 10% on total cost? Determine the selling price. (07 Marks)
- 6 a. Write a note on current assets and liabilities. (04 Marks)
- b. Differentiate between balance sheet and profit and loss account. (08 Marks)
- c. Following is the financial status of a company as on 31st March 2015. Prepare a balance sheet.

| Particulars | Amount in (₹) | Particulars | Amount in (₹) |
|--------------------------|---------------|-------------------|---------------|
| Share capital | 2,00,000 | Cash at bank | 2,500 |
| Sundry creditors | 39,500 | Sundry debtors | 87,490 |
| Bills payable | 33,780 | Land & Building | 1,48,500 |
| Bank overdraft | 59,510 | Goodwill | 000 |
| Reserves | 50,000 | Plant & Machinery | 1,12,950 |
| From profit and loss a/c | 39,690 | Provision for Tax | 40,000 |
| Stock | 1,11,040 | | |

(08 Marks)

- 7 a. Briefly explain: i) Liquidity ratios, ii) Activity ratios. (10 Marks)
- b. Assume that a firm has owners equity of ₹1,00,000. The ratios of firm are:
 Current debt to total debt = 0.40
 Total debt to owners equity = 0.60
 Fixed assets to owners equity = 0.60
 Total assets turnover = 2 times
 Inventory turnover = 8 times
 From the given data calculate total debt, inventory, fixed assets, total capital, total assets and sales. (10 Marks)
- 8 a. What is financial planning? List and explain essentials of financial planning. (08 Marks)
- b. Explain briefly the advantages and limitations of budgeting. (06 Marks)
- c. Write notes on:
 i) Production budget and manufacturing budget
 ii) Capital expenditure budget (06 Marks)

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